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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/08/2004

Oskar Koch

47370

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1609

7590

05/10/2006

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EXAMINER

KEYS, ROSALYND ANN

ART UNIT

PAPER NUMBER

1621

DATE MAILED: 05/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/506,974	Applicant(s) KOCH, OSKAR	
	Examiner Rosalynd Keys	Art Unit 1621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9/8/04</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Status of Claims

1. Claims 1-13 are pending.
Claims 1-13 are rejected.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted on September 8, 2004 has been considered by the examiner.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 3, 5, 8 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Pati et al. (Tetrahedron Letters, Vol. 41, Issue 52, December 2000, pp. 10353-10356).

Pati et al. teach preparing 5-methoxy-3,3-dimethyl-indan-1-one by oxidation of 6-methoxy-1,1-dimethylindan with CrO₃ (see second paragraph on page 10353).

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6. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by references XP-002242457, XP-002242444 and XP-002242445.

Each of these references discloses a compound represented by the claimed formula (II).

7. Claim 9 is rejected under 35 U.S.C. 102(b) as being anticipated by references XP-002242451 and 002242452.

Each of these references disclose a compound represented by the claimed formula (IV).

8. Claims 9-11 are rejected under 35 U.S.C. 102(a) as being anticipated by Koch et al. (WO 02/38537 A1).

Koch et al. teach the compound 5,6-dimethoxy-3,3-dimethyl-1-indanon, which is useful for preparing indanylidene compounds, which are useful as UV-A, filters in cosmetic agents (see entire disclosure, in particular the abstract and example 1).

Bringen et al. (EP 1 000 950) teach compounds having the claimed formula IV, which are useful in preparing indanylidene compounds which are effective in absorbing ultra violet radiation and are useful in cosmetics (see entire disclosure, in particular page 2, paragraphs 0001 to 0004; page 4, paragraphs 0014-0026; and page 8, paragraphs 0038-0044).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wood (US 3,078,319).

Wood teaches a process for preparing alkyl-1,1-dimethylindans by a one-step reaction of isoprene with a monoalkylbenzene in the presence of an acid catalyst (see entire disclosure, in particular column 1, line 52 to column 3, line 19).

The claim differs from Wood by employing an alkoxy substituted benzene to prepare an alkoxy substituted 1,1-dimethylindan. However, the reactions are analogous in that they are both related to methods of preparing 1,1-dimethylindans by reacting a substituted benzene with isoprene in the presence of an acid. One having ordinary skill in the art at the time the invention was made would have been motivated to employ the process of Wood with the expectation of obtaining the desired product because the artisan would have expected the instant reaction to proceed similarly to the reaction of Wood, despite the presence of the alkoxy group(s) on the instant benzene starting material. Further, once the general reaction has been shown to be old, the burden is on the applicant to present reason or authority for believing that a group on the starting compound would take part in or affect the basic reaction and thus alter the nature of the product or the operability of the process. See *In re Neunebauer et al.* (CCPA 1964) 330 F2d 353, 141 USPQ 205 and *In re Boe et al.* (CCPA 1974) 505 F2d 1297, 184 USPQ 38.

12. Claims 2, 3, 5 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Flanagan et al. (J. Org. Chem., August 1966, Vol. 31, No. 8, pp. 27-6-2718).

Flanagan et al. teach reaction of isoprene with 1,2,4-trimethylbenzene in the presence of

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concentrated sulfuric acid to give 1,1,4,6,7-pentamethylindan, which was oxidized with chromic oxide to give 3,3,4,5,7-pentamethyl-1-indanone (see entire disclosure, in particular reaction scheme I on page 2717).

The claims differ from Flanagan et al. by employing an alkoxy substituted benzene to prepare an alkoxy substituted 1,1-dimethylindan. However, the reactions are analogous in that they are both related to methods of preparing an indan by reacting a substituted benzene with isoprene in the presence of an acid followed by oxidation of the indan to the corresponding indanone. One having ordinary skill in the art at the time the invention was made would have been motivated to employ the process of Flanagan et al. with the expectation of obtaining the desired product because the artisan would have expected the instant reactions to proceed similarly to the reactions of Flanagan et al., despite the presence of the alkoxy group(s) on the instant benzene starting material. Further, once the general reaction has been shown to be old, the burden is on the applicant to present reason or authority for believing that a group on the starting compound would take part in or affect the basic reaction and thus alter the nature of the product or the operability of the process. See *In re Neunebauer et al.* (CCPA 1964) 330 F2d 353, 141 USPQ 205 and *In re Boe et al.* (CCPA 1974) 505 F2d 1297, 184 USPQ 38.

13. Claims 3-7, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pati et al. (Tetrahedron Letters, Vol. 41, Issue 52, December 2000, pp. 10353-10356) in view of Murahashi et al. (US 5,426,237), Adchemco Corp. (JP 2001247505 A), Idel et al. (4,487,698), Matlock et al. (US 4,277,318), Alsters et al. (US 6,355,842 B1) and Ishii et al. (US 2003/0013603 A1).

Pati et al. teach the invention as described above, but fail to teach the use of oxygen as

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the oxidizing agent and its use in the presence of the metals as disclosed in claim 5, the n-hydroxy-imide as disclosed in claims 6 and 12, or a phase transfer catalyst as disclosed in claims 7 and 13.

Murahashi et al. teach a process for the oxidation of benzene derivatives, such as indan, to obtain the corresponding alcohols, such as indanol, and ketones, such as indanone (see entire document, in particular column 2, lines 42-68; column 6, line 60 to column 8, line 58; and Table 22). The oxidation takes place in the presence of a transition metal (see column 7, lines 12-48). The oxygen can be pure oxygen or air (see column 8, lines 25-34).

Adchemco Corp. teaches preparation of 1-indanones by oxidation of the corresponding indans with oxygen or oxygen containing gas in the presence of a transition metal-bromine type catalyst (see attached Derwent abstract, as well as paragraphs 0005-0031 of the detailed description of the computer generated English translation).

Idel et al. disclose that onium salts in general, and quaternary ammonium salts and phosphonium salts in particular, are used as highly active phase-transfer catalysts (see column 1, lines 11-40). It is disclosed that oxidation reactions may be considerably accelerated by means of phase-transfer catalysis.

Matlock et al. teach a method of electrochemically oxidizing benzylic methylene groups, such as indan, to the corresponding ketone in the presence of a phase transfer catalyst (see entire disclosure, in particular column 1, line 50 to column 2, line 43).

Alsters et al. teach oxidation reactions using oxygen as the oxidizing agent in the presence of a catalyst system comprising an imide compound and a cocatalyst containing one or more elements from the group consisting of transition metals and of the 2A and 3A elements of the Periodic Table (see entire disclosure, in particular column 1, line 20 to column 3, line 67). Examples of compounds to be oxidized include indanes (see column 2, lines 19 and 20).

Ishii et al. teach a catalyst system comprising an imide and a promoter/cocatalyst (see entire disclosure, in particular paragraph 0028 to paragraph 0064). The promoter/cocatalyst may be selected from metallic elements of Groups 2 to 15 of the Periodic Table of Elements or onium salts (see paragraphs 0053, 0057 and 0060). The catalyst is used in a reaction between a compound capable of forming a radical (A) and a radical scavenging compound (B) [see paragraph 0023]. Suitable (A) compounds include indan (see paragraph 0096). Suitable B compounds include molecular oxygen (see paragraph 0120).

One having ordinary skill in the art at the time the invention was made would have found it obvious to utilize the oxidation methods of Murahashi et al., Adchemco Corp., Idel et al., Matlock et al., Alsters et al. or Ishii et al. as alternative oxidation methods to the oxidation method disclosed by Pati et al.

Conclusion


14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Theimer (US 3,681,464) teaches a process for preparing an indanone by oxidation using an oxygen-metallic catalyst system (see entire disclosure, in particular column 3). The oxygen can either be pure or in admixture with an inert diluent such as nitrogen or the like. The catalyst is preferably a metal such as silver. Copper can also be used.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rosalynd Keys whose telephone number is 571-272-0639. The examiner can normally be reached on M-W & F 4-10pm; H 5:30am-5pm; Sat 8am-1pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Rosalynd Keys
Primary Examiner
Art Unit 1621

May 5, 2006